Microsoft DevOps Solutions: Implementing Orchestration Automation Solutions

PLAN AND AUTOMATE RELEASE PROCESS

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Course Overview

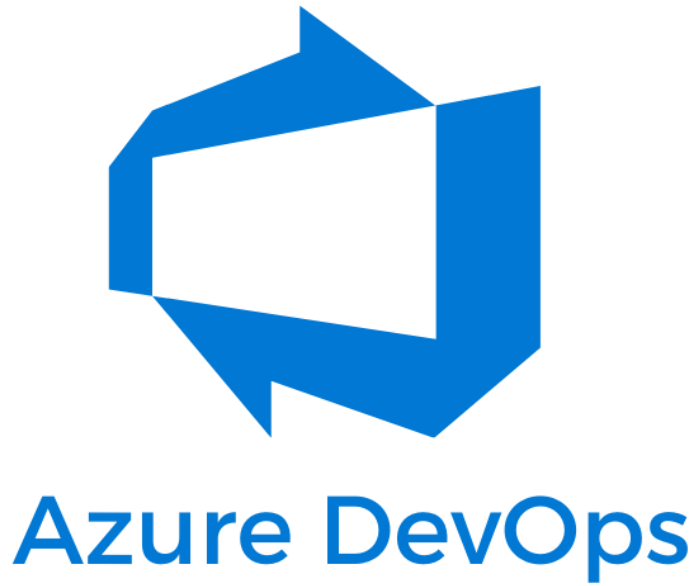
Combine release targets depending on release deliverables

Design the release pipeline to ensure reliable order of dependency deployments

Organize shared release configurations and process with YAML files and variable groups

Design and implement release gates and approval processes

Summary

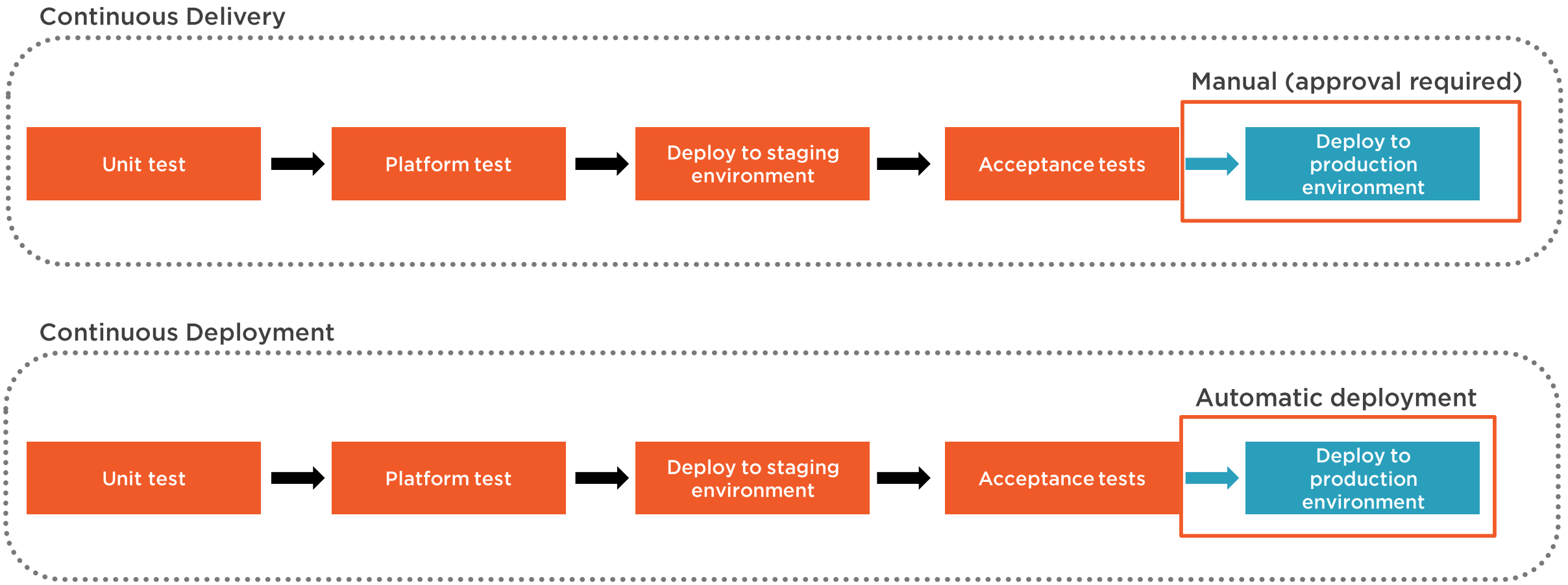

Azure DevOps

Continuous Delivery and Deployment

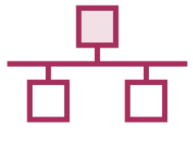
Continuous Delivery

A set of processes, tools, and techniques that enable fast, reliable, and continuous delivery of software.

Continuous Delivery vs. Continuous Deployment



Release Deliverables



Infrastructure code – Azure Resource Manager (ARM) templates

Web, desktop, or mobile application packages

Images and files

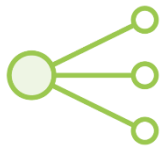
Database migration scripts

Release Targets

A managed service, such as Azure App Service

A serverless environment, such as Azure Functions

A physical machine or virtual machine



A containerized environment, such as Azure Kubernetes Service

Different Kinds of Environments

DEV

Environment with all artifacts deployed. Developers can work and test using this environment

TEST

Environment used by QA team to test all the features delivered by development team

PRODUCTION

Environment that is available for end users with all deployed solution's components

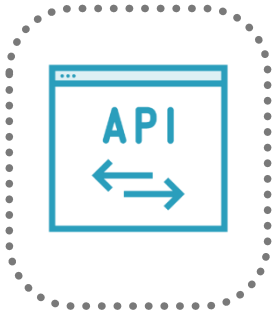
Release pipeline may consist of infrastructure and applications package's deployment steps

Design the Release Pipeline

DevOps Automation

Build Web App

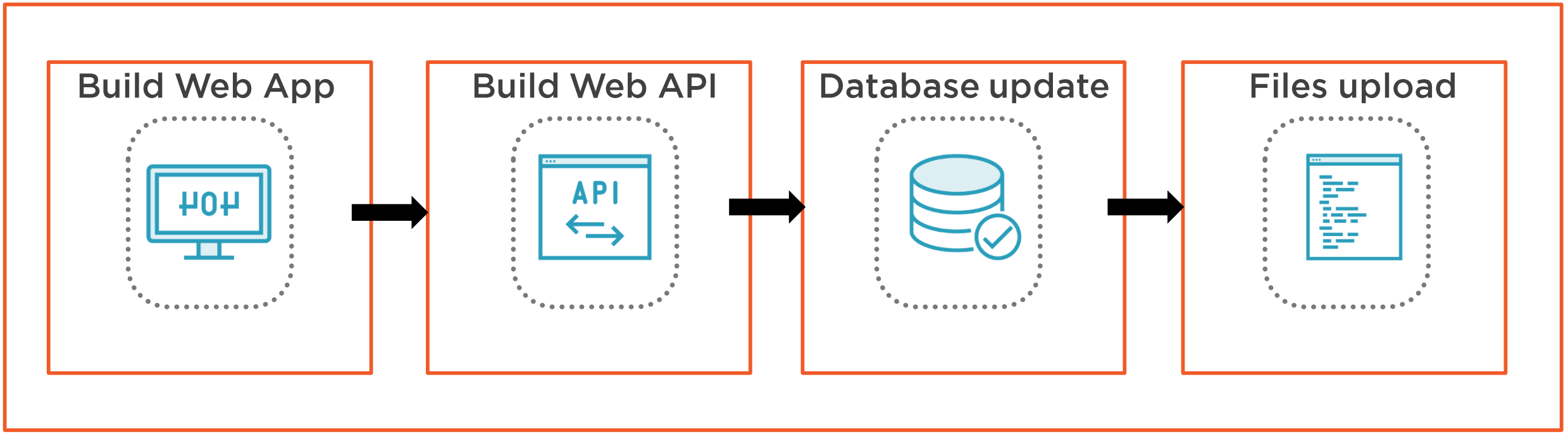
Build Web API



Database update

Files upload

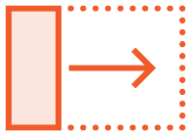
DevOps Orchestration



DevOps Orchestration

Automation applies to tasks that are common to one area, such as launching a web service, or integrating a web app, or updating a database. When all these tasks must work together, DevOps orchestration is required.

Parts of a Basic Continuous Delivery Pipeline

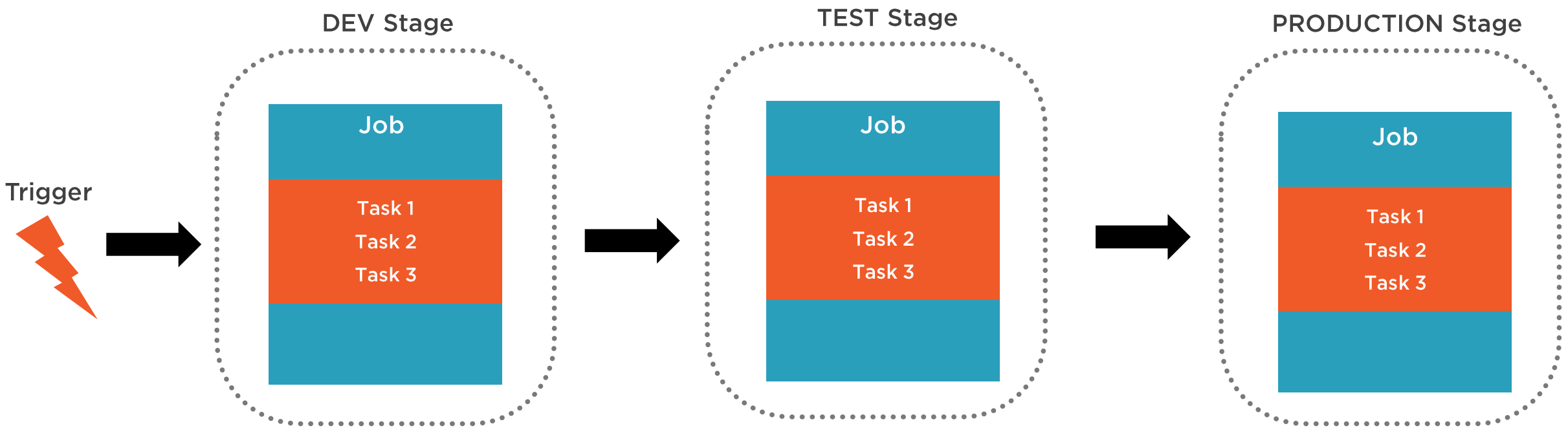


Trigger – an action that triggers continuous delivery pipeline.
Example: new commit to specific branch in the source code repository.

Deployment phase (stage) - a logical boundaries in the pipeline. A stage is made up of jobs.
Example: stage that deploys the application packages to a specific environment (dev or production).

Job - a series of steps (tasks) that defines how to build, test, or deploy software.

Release Pipeline Example

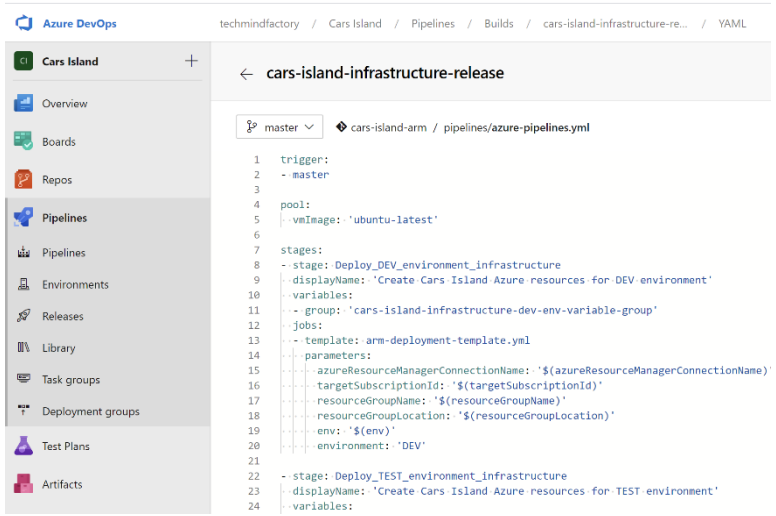


Demo

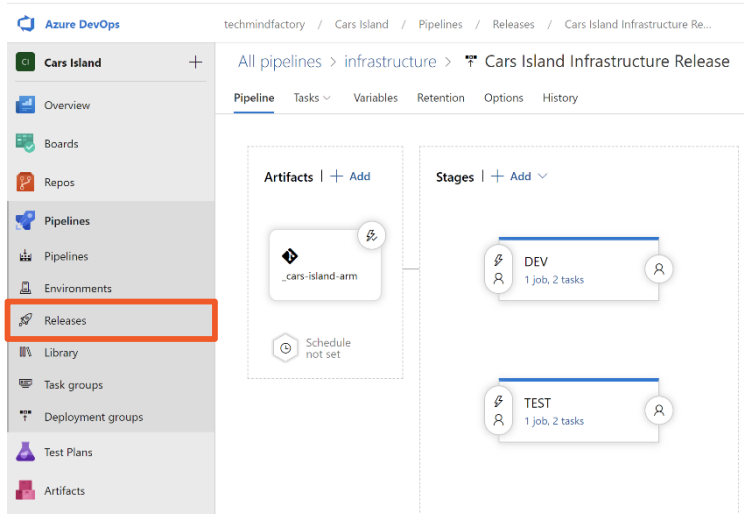
Implement infrastructure release pipeline using Azure DevOps Releases

- Create release pipeline for the Azure infrastructure
- Setup variable groups to keep shared configuration

Azure DevOps Pipelines and Releases

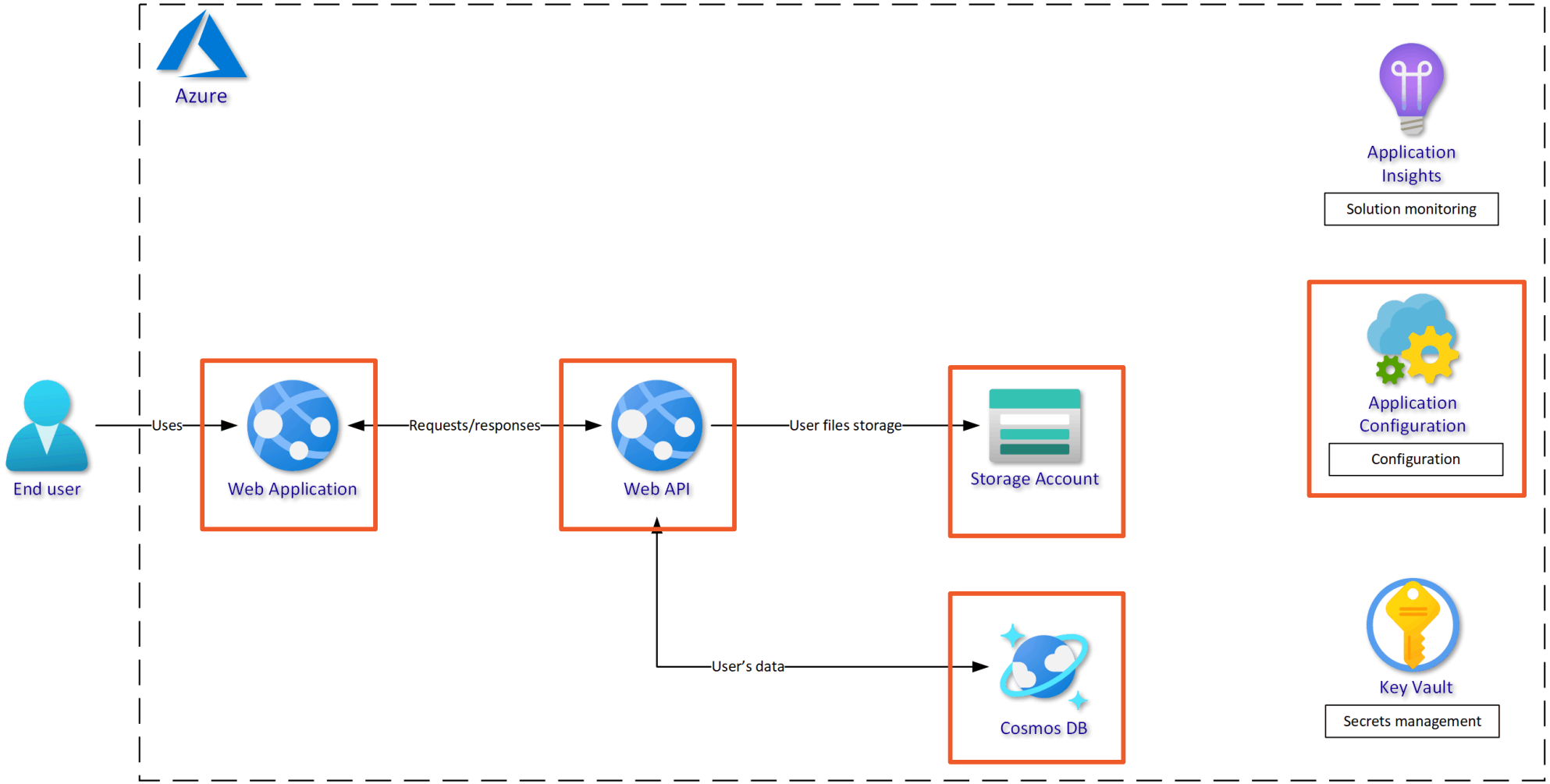


Pipelines (YAML files)



Releases (Designer)

Solution Architecture



Demo

Implement web apps release pipeline using Azure DevOps Releases

- Create release pipeline for the ASP .NET Core web app
- Update settings with configuration from the Azure App Configuration

Summary

- Difference between Continuous Delivery and Deployment
- DevOps automation vs DevOps orchestration
- How to combine release targets depending on release deliverable
- How to design the release pipeline to ensure reliable order of dependency deployments
- How to organize shared release configurations using variable groups